CLAIMS

1. A device for measuring current in an inductor (12), which device is intended to be connected in parallel with said inductor, comprising two terminals A and B, characterized in that it comprises:
   - a network in parallel (10) with the inductor and connected to the terminals A and B having a resistor R2 in series with a resistor R1 in parallel with a capacitor C1;
   - a voltage offset circuit (14, 16, 22) having a DC voltage generator E connected in parallel with an offset resistor (Roffset, R15) in series with two resistors in parallel R3 and R4, the positive pole of the generator being connected to the common point of the two resistors R3 and R4 and to the common point of the resistor R1 and the capacitor C1 of the network intended to be connected to one of the two terminals of the inductor, the negative pole of the generator E being connected to the offset resistor;
   - a temperature compensation circuit (20, 24) comprising a current source controlled as a function of the temperature, one of the two terminals of the current source being connected to the negative pole of the generator E, the other terminal of the current source being connected to different points of the measurement device according to the direction of variation of the current of the source as a function of the temperature;

   and in that the measurement of voltage Vmes, the image of the current in the inductor, is performed between the common point of the resistors R1, R2 of the network and the common point of the offset resistor and of the two resistors R3 and R4.

2. Device for measuring current as claimed in claim 1, characterized in that the inductor being equivalent to a pure inductive part L in series with a resistive part RL the network in parallel with the inductor satisfying the condition expressed by the relation:
   $\frac{L}{RL} = \frac{R1 \times R2}{R1 + R2} \times C1$ so that the voltage V_{C1} across the terminals of the capacitor C1 is independent of the voltage V_L across the terminals of the inductor.

3. The device for measuring current as claimed in either of claims 1 or 2, characterized in that, the variation in current of the current source

as a function of the temperature being effected in a first direction, the other terminal of the current source is connected to the point of connection between the resistors R1 and R2 of the network.

4. The device for measuring current as claimed in either of claims 1 or 2, characterized in that, the variation in current of the current source as a function of the temperature being effected in a second direction, the other terminal of the current source is connected to the point of connection between the resistors R3, R4 and the offset resistor (Roffset) of the compensation circuit.

5. The device for measuring current as claimed in one of claims 1 to 4, characterized in that the current source of the temperature compensation circuit (20, 24) may be embodied in various ways, for example on the basis of voltages across the terminals of networks of electrical or electronic components among which we may cite:

- temperature dependent variable resistors (platinum resistors, silicon resistor, for example resistor known commercially as KTY from the manufacturer "INFINEON" ...);
- diodes whose threshold voltage varies with temperature (-2 mV/°C);
- or any other electronic circuit providing a temperature dependent voltage or current (integrated temperature sensor such as the AD590 from the manufacturer "Analog Device"...).

6. The device for measuring current as claimed in one of claims 1 to 3, characterized in that it comprises:

- the network (10) in parallel with the inductor (12) and connected to the terminals A and B having the resistor R2 in series with the resistor R1 in parallel with the capacitor C1,
- a voltage offset circuit (22) comprising the generator E connected in parallel with an offset resistor R15 in series with two resistors R3 and R4 in parallel, the positive pole of the generator E being connected to the common point of the two resistors R3 and R4 on the side of these resistors and to the common point of the resistor R1 and the capacitor C1 linked to the terminal B of the inductor 12, the negative pole of the generator E being linked to the offset resistor R15;
- a temperature compensation circuit (24) comprising a resistor

R14 linked by one of these two terminals to the common point between the two resistors R1 and R2 of the network and by the other terminal to an output ps of a divider bridge comprising a resistor R13 in series with a thermistor RKTY, the divider bridge being connected, on the side of the thermistor RKTY to the positive pole of the generator E and on the side of the resistor R13 to the negative pole of the generator E.

7. The device for measuring current as claimed in claim 6, characterized in that the thermistor RKTY is based on silicon, the resistance of which varies in a substantially linear manner as a function of the temperature.

8. The device for measuring current as claimed in one of claims 1 to 7, characterized in that it comprises a capacitor C1' in parallel with the resistors R3 and R4.